

MASS GIS Data Viewer

Viewer Basics: User Guide

Adding and Manipulating Themes

Exercise #3

In This Exercise:

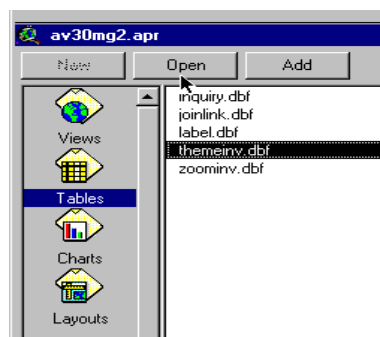
- Understanding Theme Organization
- Add Themes to a View
- Exploring a Theme's Metadata
- Moving Themes in the Table of Contents
- Changing Theme Appearance (Paint Bucket)
- Changing Theme Appearance (Paint Brush)
- Using Transparent Symbols

In this exercise, we will use Ashburnham in all diagrams. You use your own town.

1. Understanding Theme Organization

- a) Before beginning this Exercise be sure that your View has the **MA Towns extent** and is zoomed in to **Your Community**
- b) Map layers or themes are displayed in the View window and are listed in the View's **Table of Contents**.
- c) There are hundreds of themes in the MassGIS database. With so much data available we have grouped the themes according to various categories. The easiest way to determine what themes exist is to examine the **3-page "Themes Currently Available"** handout.

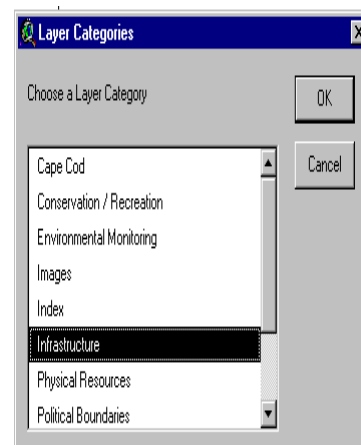
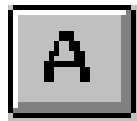
Note: Go to the Window menu and select the **".apr"** project. Notice that several files ending in **.dbf** are listed. Select the **"theme"**. A table will open showing the various menu options (#1, #2, #3) for the types of themes. This is a digital duplicate of the 3-page handout.



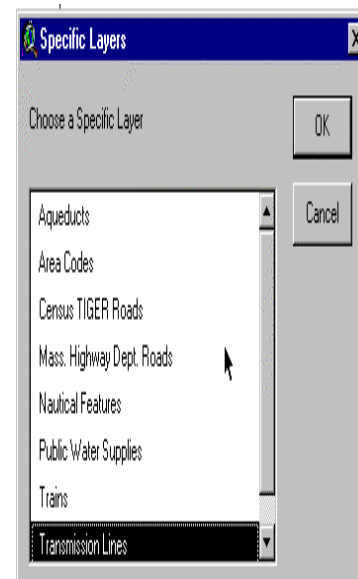
- d) When using the handout begin with the **menu#3 column** and work backward to **menu#1** column.

Note: If a theme appears as a choice in your menu, it may not be available on your community's CD. The availability of data varies throughout the state. In addition the data must be converted through various means before it can be placed on a CD. The MassGIS web page has the most current list of available themes.

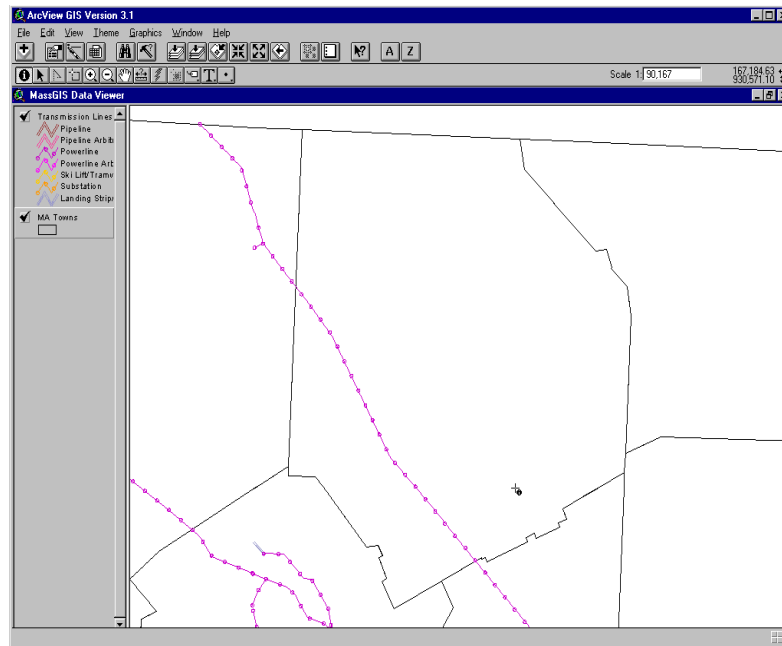
- e) By using the “A” button you will see a list of themes “**Layer Categories**”. This represents Menu#1 on your handout. For example: Select “**Infrastructure**” and click **OK** or (Double click “Infrastructure”)



- f) Now the “**Layer Categories**” moves into Menu#2 “**Specific Layers**”. This includes a list of all the types of infrastructure layers available for Massachusetts. For example: Select “**Transmission Lines**”, **double click** or select and click **OK**.



- g) In this case there is no Menu#3. Instead the transmission lines are show in your MassGIS Data Viewer window.

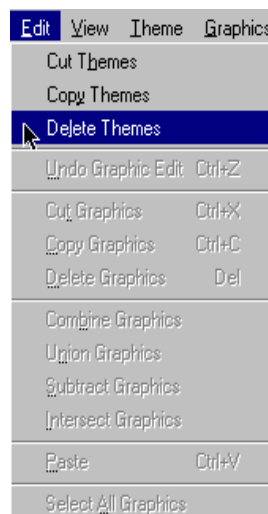


Note: If you are looking for a specific layer you may wish to use the handout. For those individuals who have loaded the MassGIS Data Viewer into an existing ArcView (3.0, or 3.1, or 3.2 program) you will be able to open an extension that displays the map layer menus in a table.

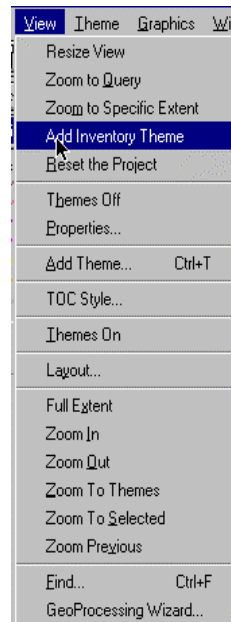
2. Adding Themes to a View

Let's add the open space and recreation theme to our community view. This theme is rich with data so we will be able to explain many facets of the data.

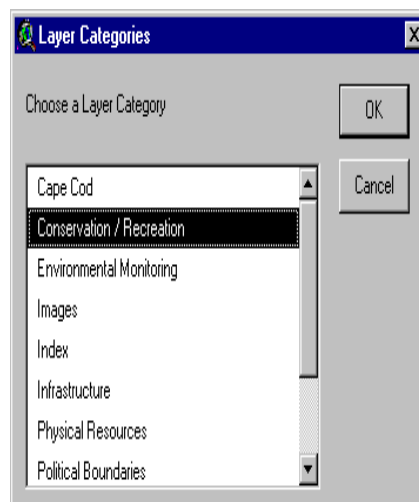
- a) Begin by deleting the "**Transmission**" Theme added in Step #1 above.



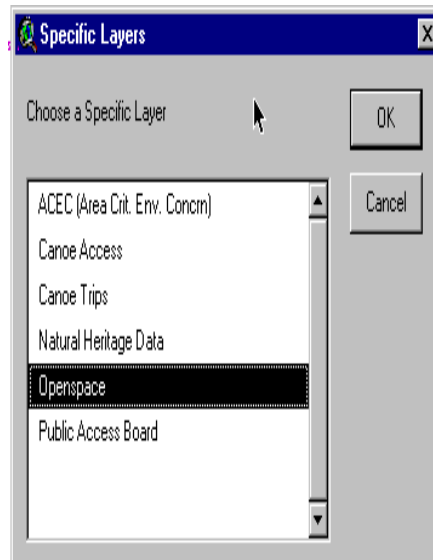
b) You may go to the “A” button and **click once**.



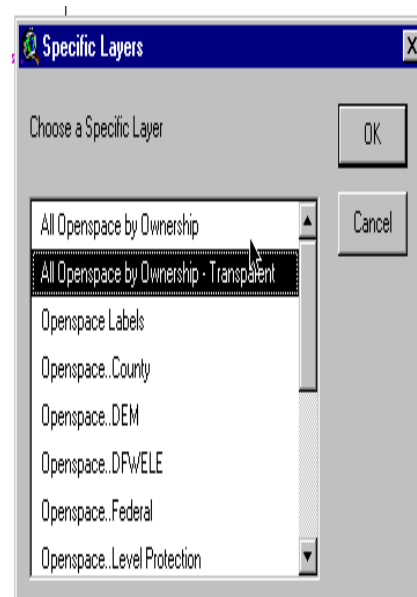
c) If you are using the Menu Handout (Menu#3) you will notice that the open space theme is located in the “**Layer Categories**” “**Conservation/Recreation**” folder. When the “**Layer Categories**” window appears on your screen, select “**Conservation/Recreation**” by **double clicking**, or click **OK**.



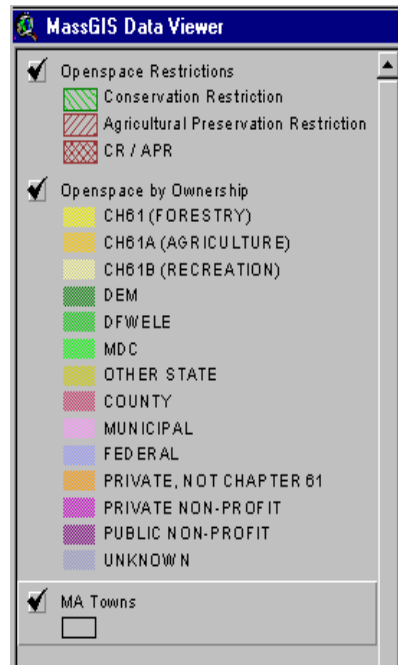
- d) The window “**Specific Layers**” appears on the screen (Menu#2). In this window, select the “**Openspace**” by **double clicking** or click **OK**.



- e) In the “**Specific Layers**” window (Menu#3), we see several options. Each of these will give us a different appearing “**Openspace**” theme. In this example, select “**All Openspace by Ownership – Transparent**” by **double clicking** or click **OK**.



- f) Two themes appear in the View Table of Contents: “**Openspace Restrictions**” and “**Openspace by Ownership**”. **Hint:** you may have to widen the Table of Contents by using the mouse. Move the mouse pointer between the vertical line between the Table of Contents and the View Window. Drag the mouse pointer which changes to a horizontal arrow to your right to widen, and to your left to reduce the Table of Contents area size.



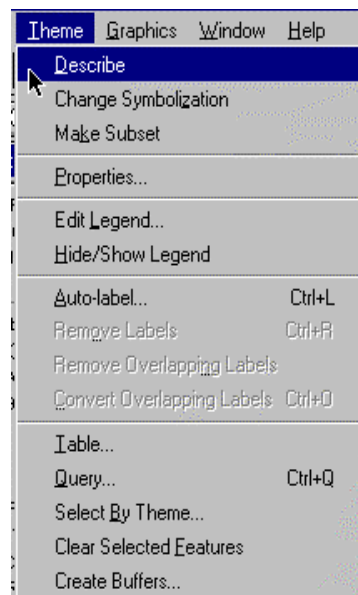
Note: These themes have already been created with ArcView software to display specific colors and lines to illustrate the information. Later in this exercise, we will learn how to modify some of these colors and lines.

Note: The “transparent” in the original theme layer refers to that fact that the theme contains patterns that enable us to see through it to other layers below it. This is a special technique used in ArcView software to facilitate viewing many themes layered in a View.

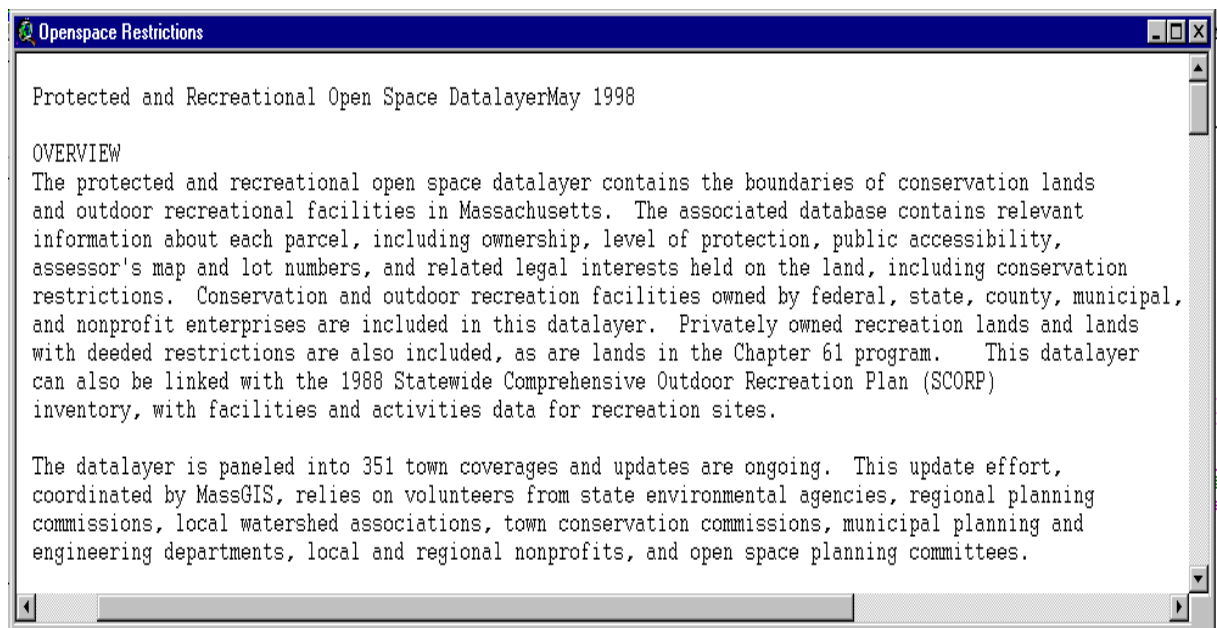
3. Exploring a Theme’s Metadata

In MassGIS each theme has a library of information that tells how the information was collected, projected and transformed into GIS use. This theme information is called “**Metadata**” or “**Datalayer Description**”

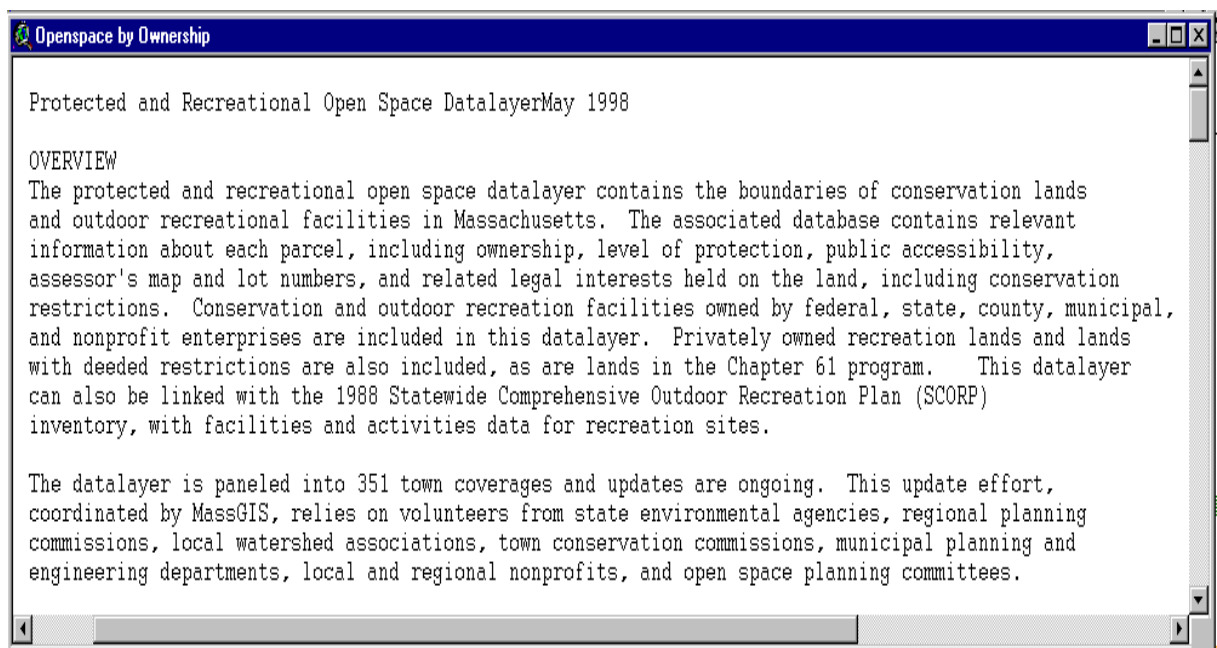
- a) Make the theme “**Openspace Restrictions**” active. **Hint:** remember to activate a theme you need only click near the theme’s name. A box-like structure will appear around the theme when it is activated.
- b) Go to the **Theme menu** and select “**describe**”. A text document window will appear that describes how the data was collected, the various codes used in the data, code definitions and other important information. Look over the “**metadata**” (datalayer description) on your screen. **Hint:** Make the text box larger by placing the mouse pointer in the lower right corner of the text box and dragging the pointer to the lower right corner of your computer screen.



Note: Notice the “Metadata” has an Overview, Source Information, Suggested Data Use, Table (attribute) information about Polygon shapes and Arc (line) shapes, Code Information referring to the Table Fields.

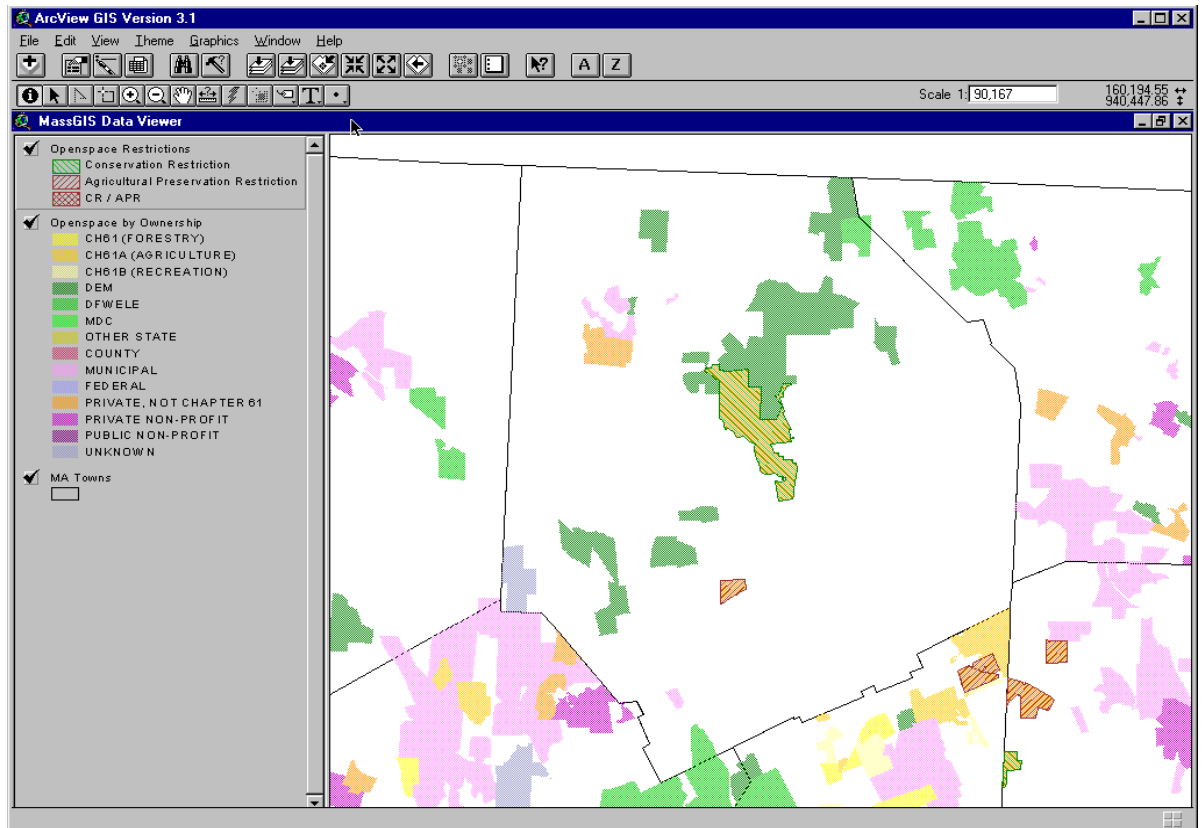


- c) After you have read over the “**Metadata**” for the “**Openspace Restrictions**”. Open the “**Openspace by Ownership**” Metadata. **Hint:** Remember to activate the theme first and then go to the Theme menu and select “**describe**”. Explore the metadata for this theme and then close the text box.

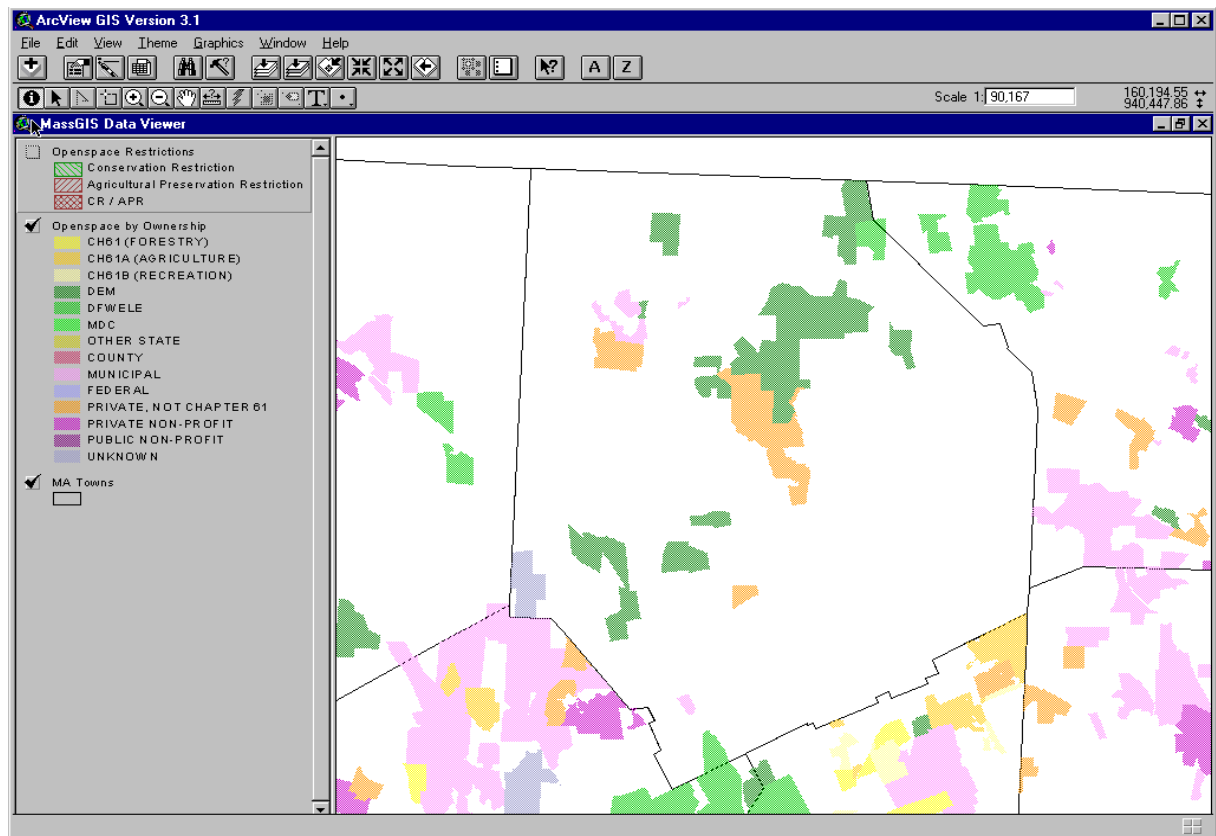


4. Moving Themes in the Table of Contents

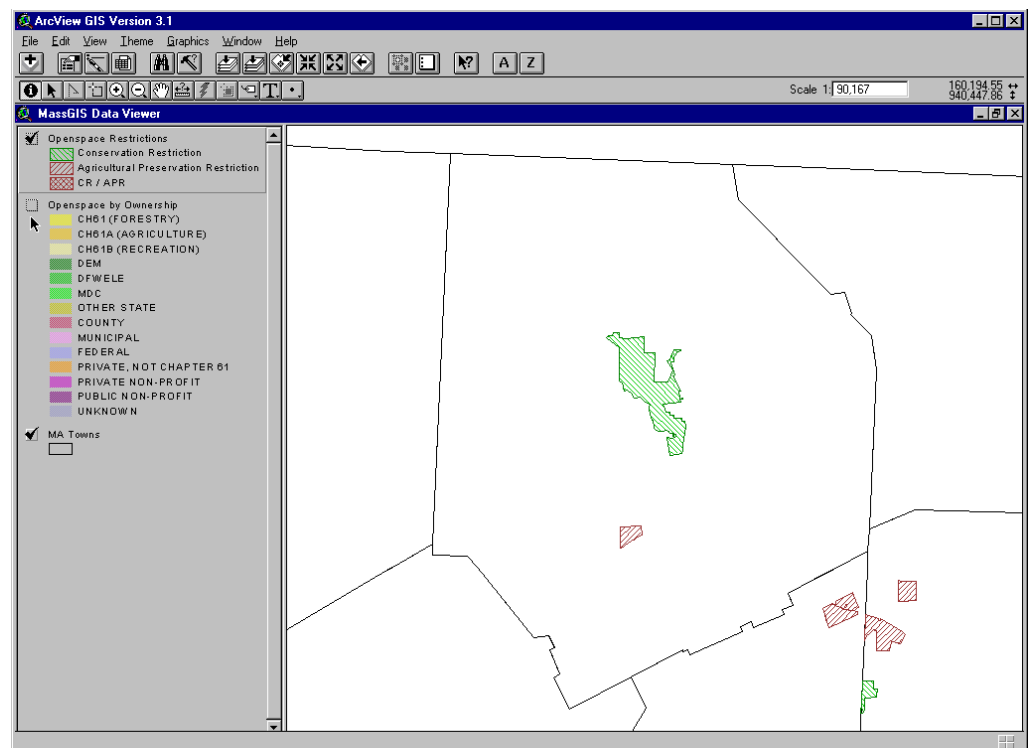
- a) The order in which theme (layers) appear in a View depends upon where the theme (layer) is located in the View's Table of Contents. With all the themes turned on (checked: “**Openspace Restrictions**”, “**Openspace by Ownership**” and “**MA Towns**”), focus your eyes on a landuse area shown with stripes. All of the information about the theme “**Openspace Restrictions**” is illustrated in the View with stripes.



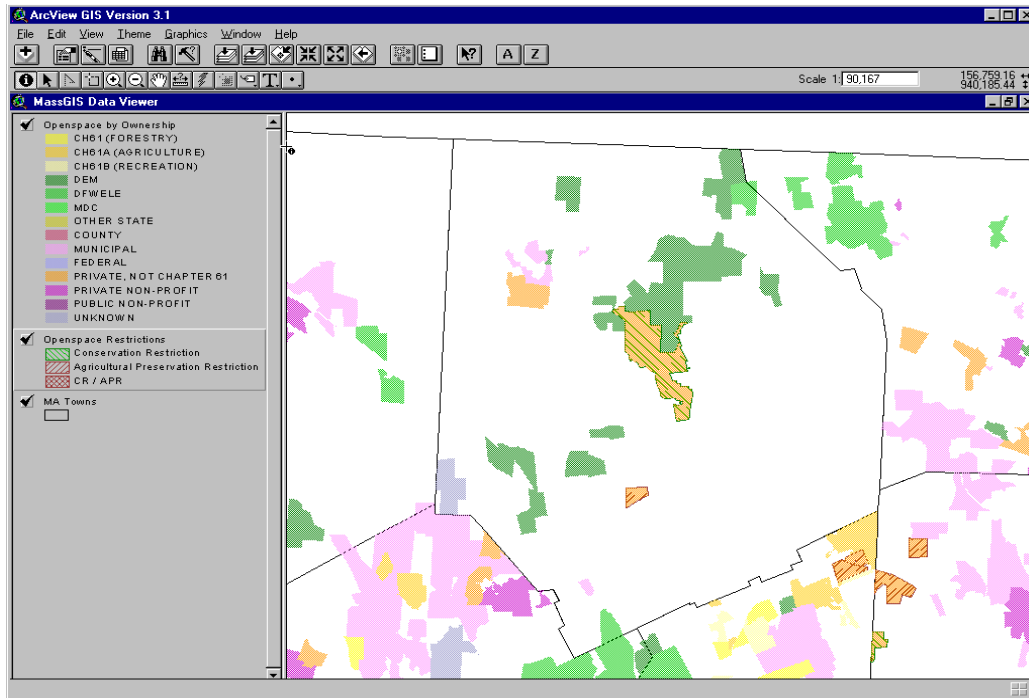
- b) Now uncheck the “**Openspace Restrictions**” theme. What happened to the stripes in your focus area? They should have disappeared.



Recheck the “**Openspace Restrictions**” theme. Do the same to the “**Openspace by Ownership**” theme. In this case many landuse areas disappeared from your view. The stripped areas remained but showed some color changes. Recheck the “**Openspace by Ownership**” theme



- c) You can change the order of information within your View by changing the order of the themes in the View's Table of Contents. Drag the **"Openspace Restrictions"** theme below the **"Openspace by Ownership"** theme and notice what happens in your View.



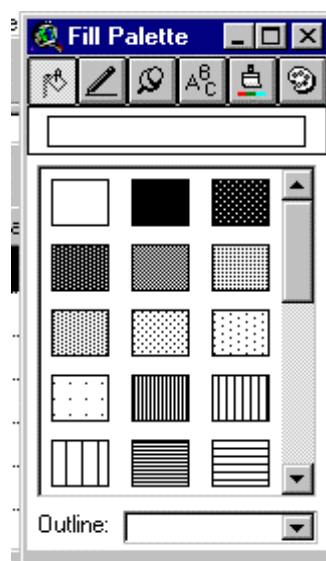
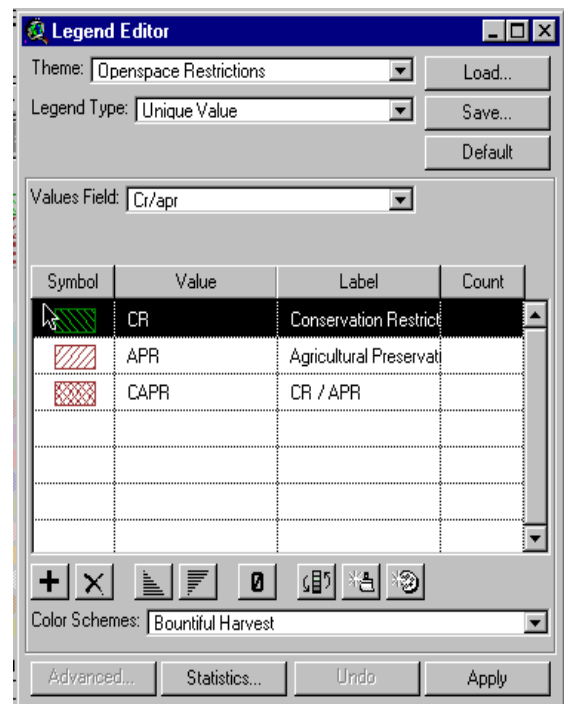
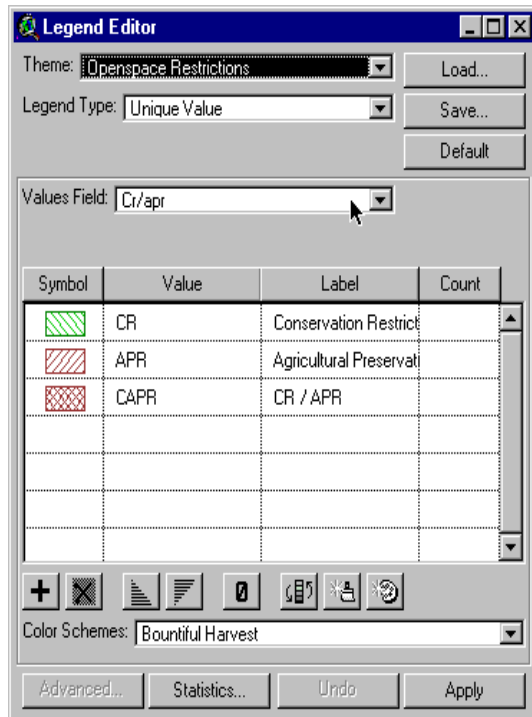
Note: Remember both of the Themes used in this exercise had some features made transparent. The striped "Openspace Restrictions" theme contains symbols that are striped but the spaces in between the stripes were made transparent when they were created in ArcView. This enables us to see layers below the theme. When the "Openspace by Ownership" is below the "Openspace Restrictions", we can see which Ownership areas also have Restrictions. When the "Openspace Restrictions" are located below the "Openspace by Ownership" we lose the ability to clearly see which ownership parcels are restricted. One of the skills needed in ArcView is to be able to understand layers. By layering the themes in your View we are able to see some information more clearly than other information.

- d) In your View, can you tell which private ownership has openspace restrictions?
Or do you see any other areas with restrictions?

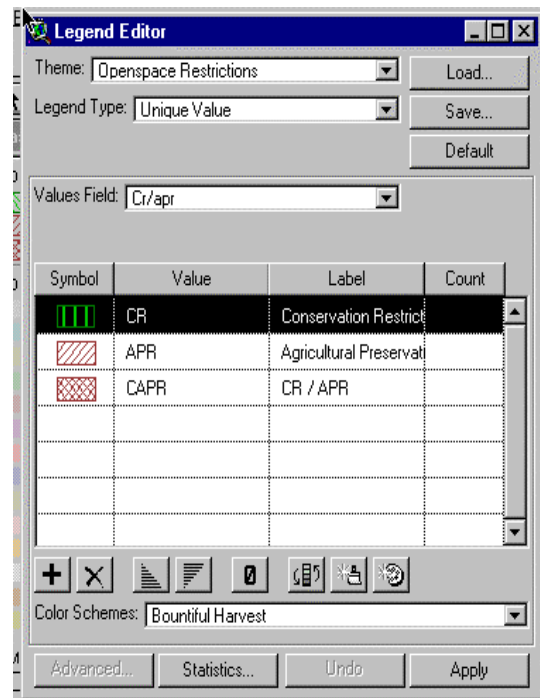
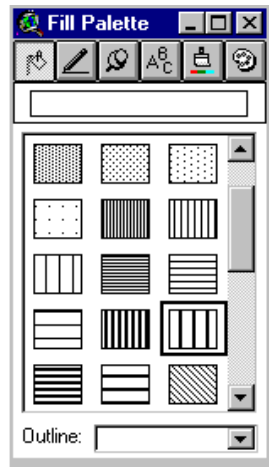
5. Changing Theme Appearance (Using The Paint Bucket)

Lets assume that the colors and/or stripes used in the themes are not clear enough for you. In the Viewer you are able to change colors and how symbols are shaded.

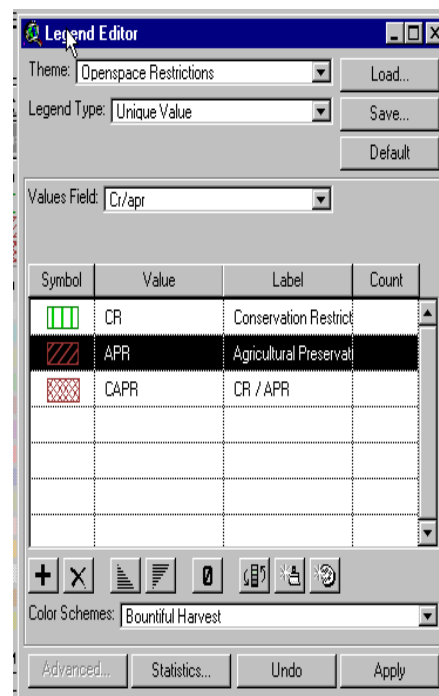
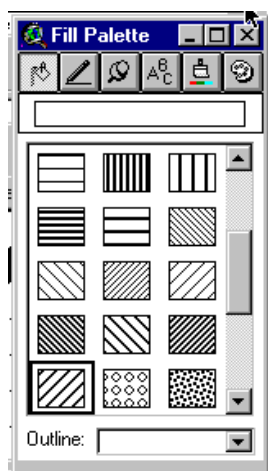
- a) Double click in raised box area of the activated theme **“Openspace Restrictions”**. The **“Legend Editor”** window appears. Notice there is a table-like section in the window. In the table find the word **“Symbol”**, select the **CR symbol** by clicking its symbol box once. Single clicking highlights the symbol box. Double click the **CR symbol** and a **“Fill Palette”** window appears.

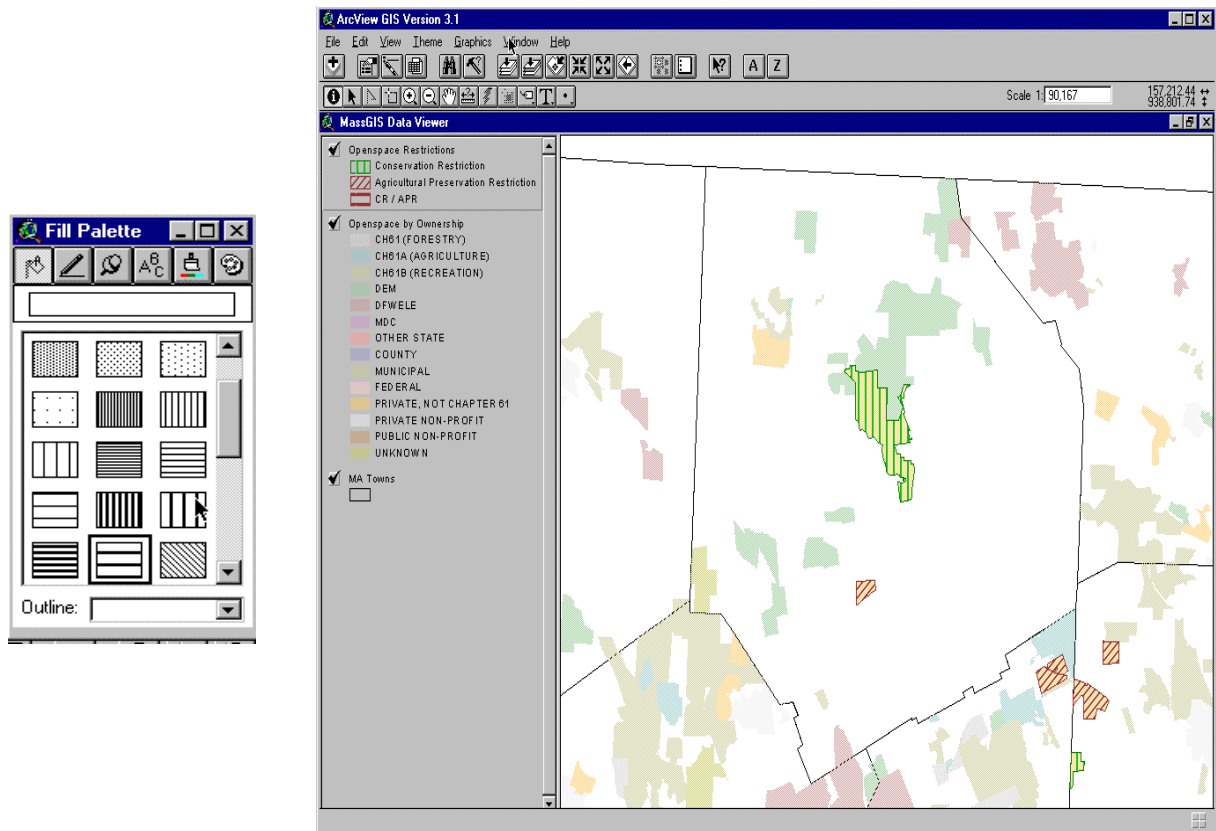


- b) In the “**Fill Palette**” window, notice that there are several icons shown. **The paint bucket** is highlighted because this is the active palette icon. Scroll through the fill choices, and select a fill that has a wide vertical stripe. Notice that the stripe now changes in the Symbol window. If this is the fill you want, click “**Apply**”



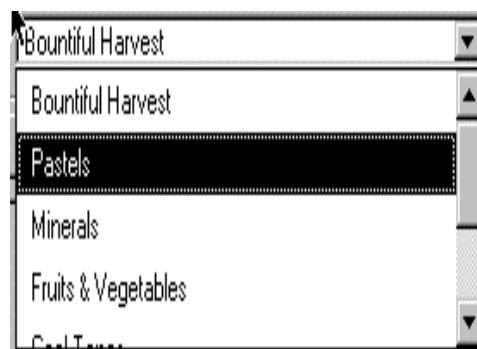
- c) The wide vertical stripes are easier to see in the view. Go back and do the same for the “**APR**” and “**CAPR**” values, always selecting a wider thick stripe. When you close the “**Legend Editor**” you will also have to close the “**Fill Palette**” window. **Hint:** Remember to always select “**Apply**” when you change the symbol.



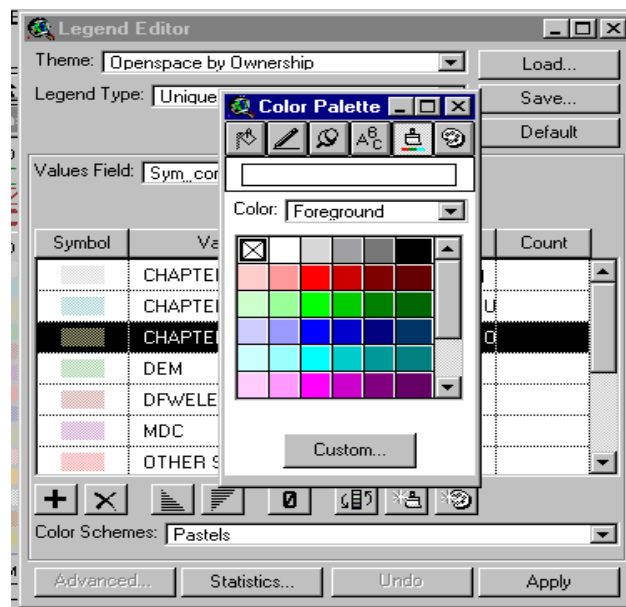


6. Changing Theme Appearance (Using Paint Brush)

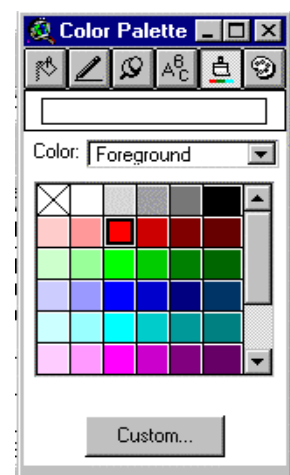
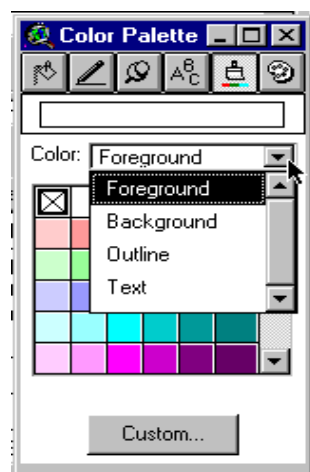
- Open the Legend Editor of the “Openspace by Ownership” theme by double clicking inside its box.
- There are two major ways we can change colors of the Symbols. The first method is the easiest. Notice at the bottom of the “**Legend Editor**” window there is a box that is labeled “**Color Schemes**”. Hold down the arrow and notice there are several color tones you may pick. Select one of these and notice how the colors change in the Symbol column in the Legend Editor. If you wanted one of these color tones you would need to select “**Apply**” for it to show in your View.



- c) Sometimes the color tones are not distinct enough for our View. Another option is to double click on the color square in the Symbol Column. When the “**Fill Palette**” appears, select the “**Paint Brush**” icon.



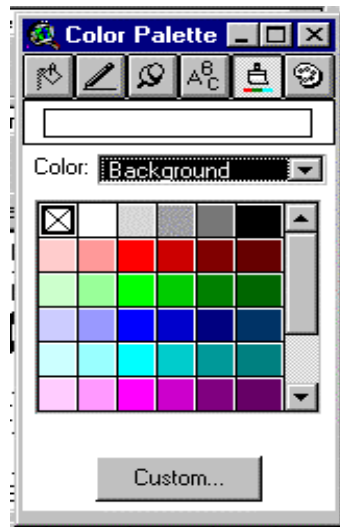
- d) In the paint brush window, a box appears labeled “**Color**”. Hold down the arrow and notice you have several choices: Foreground, Background, Outline and Text. In the symbol, Text does not apply. This option enables you to make some colors show, and others transparent.
- e) Change the “**color**” box to “**Foreground**” and make the symbol a different color than it appears. By clicking apply, the color would change in your View. When working with solid colors it is best to work with the Foreground.



Note: You may also change the Outline color or appearance by selecting “Outline” in the “Color Palette” window

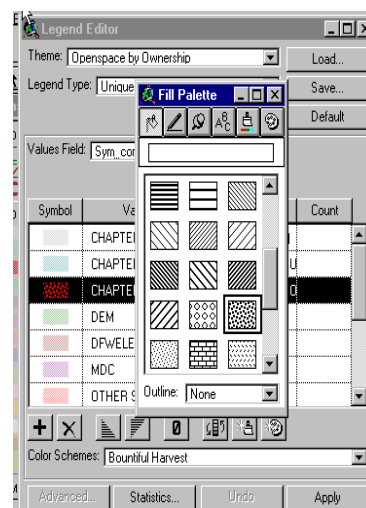
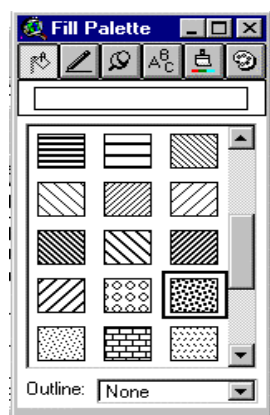
7. Using Transparent Symbols

- a) If you wanted to make the solid color striped, go back to the “**paint brush**” icon in the “**Color Palette**”. Make the **Foreground** the solid color, and the **Background** a transparent color. **Hint:** transparent colors are a white box with an **X** over them.

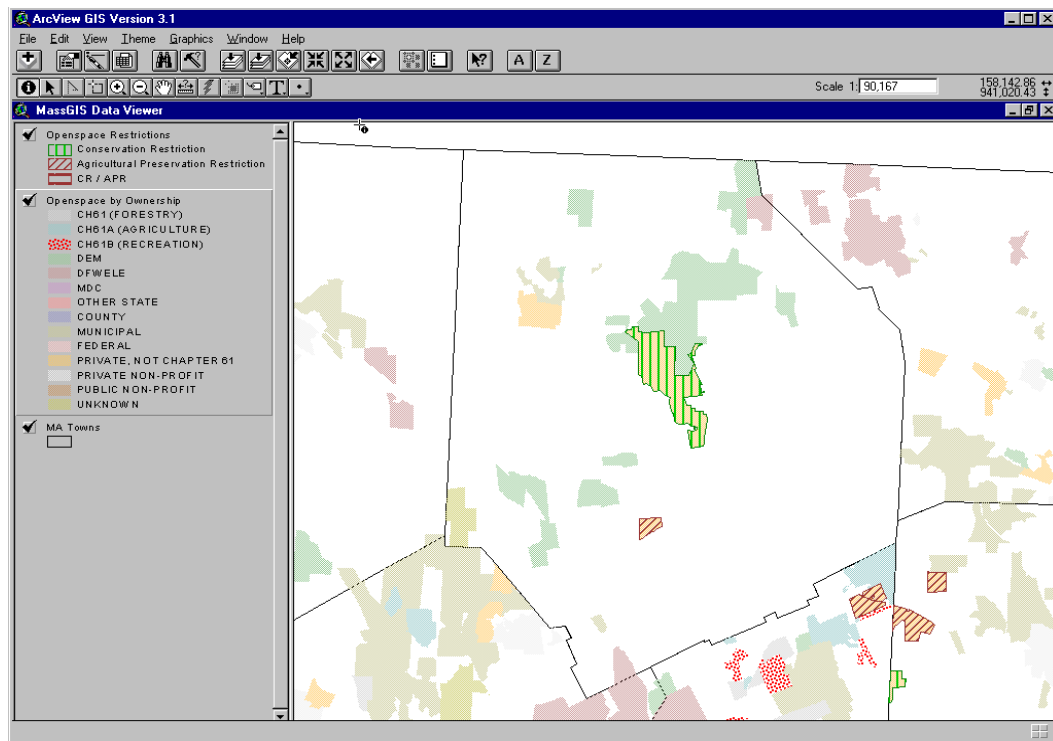


Note: Transparent is usually used when layers are placed above each other, and we want the features to show through. This is used when a layer will “overlay” another layer.

- b) Click on the “**paint bucket**” and the palette window changes to “**Fill Palette**”. In this window, select a box with many thick dots. Notice how it changes the selected Symbol in the “**Legend Editor**”. Now select “**Apply**”. Close The “**Legend Editor**” window and the “**Fill Palette**” window.
- c) Look at the View and see if you can find any areas that are dotted.



Note: It is also possible to make the outline transparent, or a different color, or a shading if you wish. You can also make the outline of a symbol have a thicker line.



Activity #3 – Adding Themes and Manipulating Themes

Using your own community, select the openspace themes used previously and experiment with color and fill changes. Also practice changing the order of the Theme layers in your View.